# Managing Interde Unprecedented Scale

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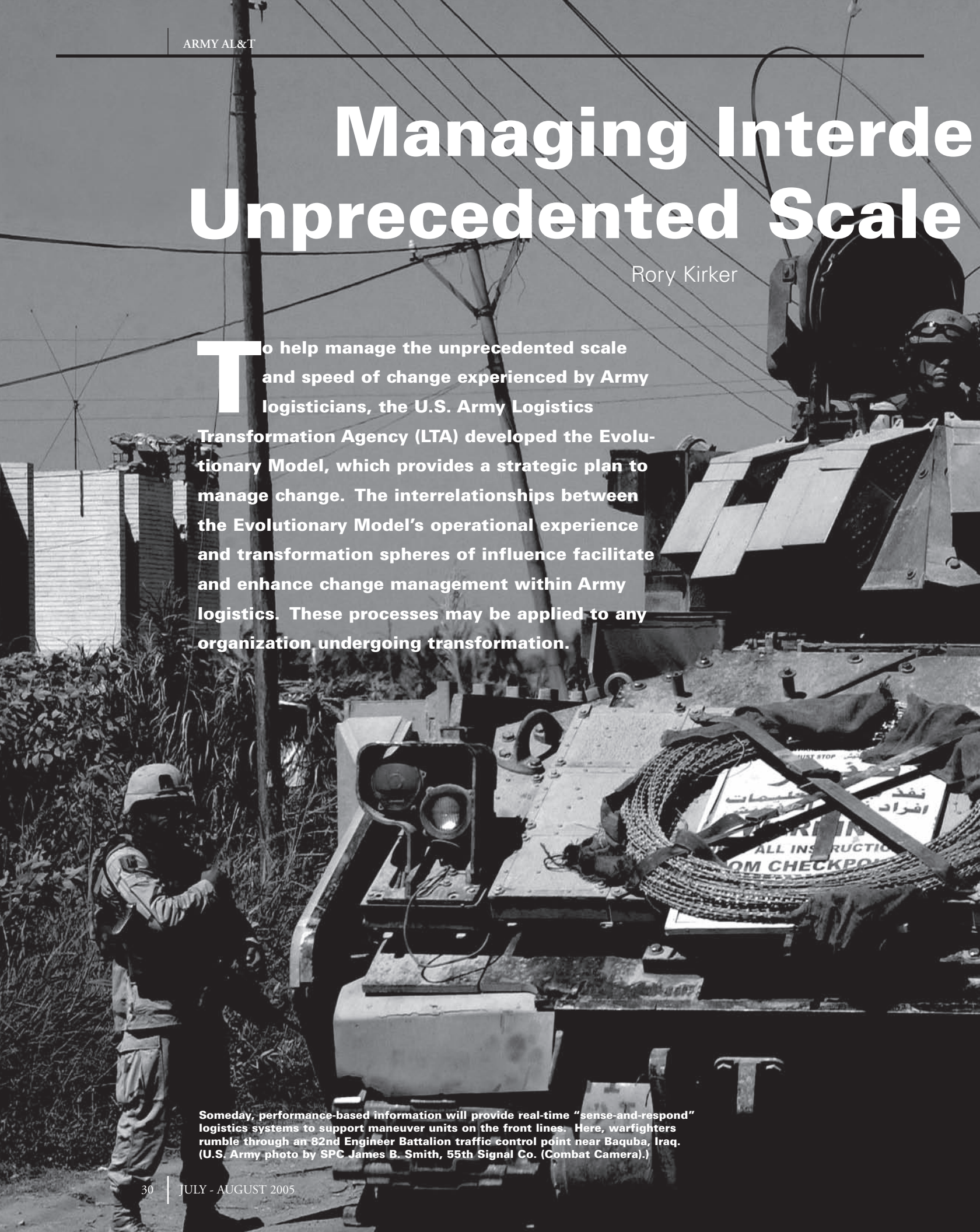
**To help manage the unprecedented scale and speed of change experienced by Army logisticians, the U.S. Army Logistics Transformation Agency (LTA) developed the Evolutionary Model, which provides a strategic plan to manage change. The interrelationships between the Evolutionary Model's operational experience and transformation spheres of influence facilitate and enhance change management within Army logistics. These processes may be applied to any organization undergoing transformation.**



**Someday, performance-based information will provide real-time "sense-and-respond" logistics systems to support maneuver units on the front lines. Here, warfighters rumble through an 82nd Engineer Battalion traffic control point near Baquba, Iraq. (U.S. Army photo by SPC James B. Smith, 55th Signal Co. (Combat Camera).)**

# pendence and the and Speed of Change

## Sphere of Influence

Turning first to the operational experience sphere of influence depicted in Figure 1, we postulate that in the real world *policy* drives the *execution* of business processes and system behavior. For example, the Army is currently moving from a mass-based supply system, in which days of supply warehoused throughout the area of operations was the prime metric, to a distribution-based supply system focused on the time required to fill a customer's need.

Changes within Army policy drive this supply system transformation. These policy changes result in *data* from the field that are *measured* against predetermined metrics, such as warehousing costs and time needed to fill customer requirements. These data reflect changes within Army business processes and system behavior. Once measured, data are *analyzed* using various tools to become *information*. For example, discreet event simulation modeling is a critical tool that provides a better understanding of a logistics system's or business process's expected behavior under a given set of conditions.

Now, armed with performance-based information, Army leadership acquires system performance *knowledge*, determining policy impacts and whether additional changes would be beneficial and should be directed. In this example, performance-based information may reflect a reduction in warehousing costs and improvement in the time needed to fill customer requirements.

However, analysis may reflect that additional improvements could be realized by providing a more adaptive and responsive distribution system. This would result in sufficient knowledge for department leadership

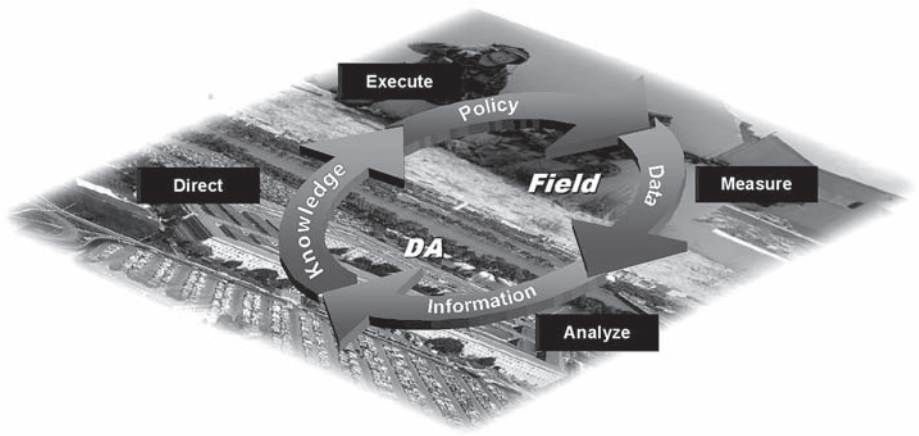



**Figure 1. Operational experience sphere of influence**


**Figure 2. Transformation process**

to direct some additional action, including a review of commercial sector best practices. The review's results could prompt the Army to establish policies to implement a "sense-and-respond" logistics system. That system may have speed and quality of effects as its prime metrics. Executing such a change may also be measured and analyzed to establish another follow-on course of action or policy change.

## Transformation Process

In Figure 2, the model's transformation portion follows a series of rational phases, beginning with a *vision*. In this phase, the Army develops a vision of future logistics requirements based firmly on future warfighting requirements. This vision may include an advancement of the sense-and-respond concept mentioned earlier to a "predict-and-preempt" logistics system that predicts requirements and preempts failure.

The Army would then develop a *plan* to achieve that vision and establish *benchmarks* and *metrics* to measure desired capability and outcomes. In this example, the plan might include developing sensor-equipped vehicles capable of predicting component failures in enough time to receive replacement parts before they are required. Direct linkages to warfighting command and control (C2) systems, combined with intelligent agents, may afford commanders greater flexibility and situational awareness (SA) by predicting unit capabilities based on equipment and logistics status. Such a system may also include a sophisticated tracking and reporting system, coupled with additional intelligent agents, to notify program managers and manufacturers that the vehicle or components will have to be produced at a higher rate to preempt critical shortages. Benchmarks to be measured could include milestones to develop other sensor-equipped platforms such as containers or trailers, a sophisticated tracking and reporting system and business process changes. The predict-and-preempt logistics system might have weapon systems or unit readiness as its prime metric.

The transformation process's third phase is developing *programmatics*, including programs, funding and synchronization. The programmatics are carefully *analyzed* to identify potential problems, are *reassessed* and a *strategy* is developed. The strategy includes a holistic plan defining the enablers, initiatives and process changes necessary to achieve a vision-defined capability. The holistic plan is then banded to balance resources across all enablers and decisions relative to capability fulfillment. Banding involves grouping the enablers necessary for a given capability and determining how much of each is required to achieve the desired capability. This helps ensure that less visible enablers are appropriately funded; otherwise, we potentially purchase an excess of one enabler and do not achieve the capability desired. In the example, the strategy could include a holistic banded plan to balance

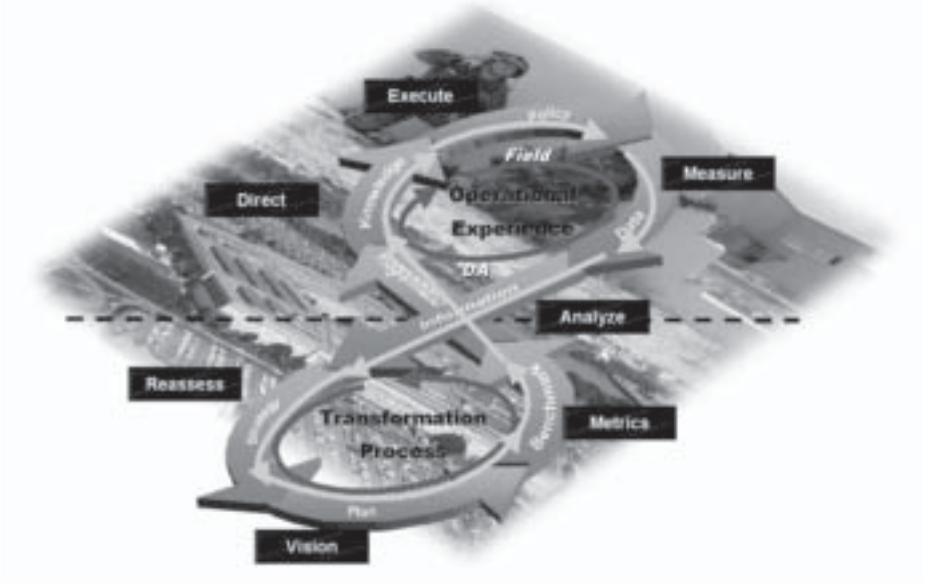



**Figure 3. Evolutionary Model optimizes interdependence**

funding for sensor-equipped platforms, the tracking and reporting system, intelligent agents and business process changes. Without funding each component at a minimum established level, we could not achieve the desired capability of predicting requirements and preempting failure. Hence, the strategy drives decision makers to ensure that every component within a system-of-systems is provided adequate funding to achieve a predetermined capability and deployment schedule.

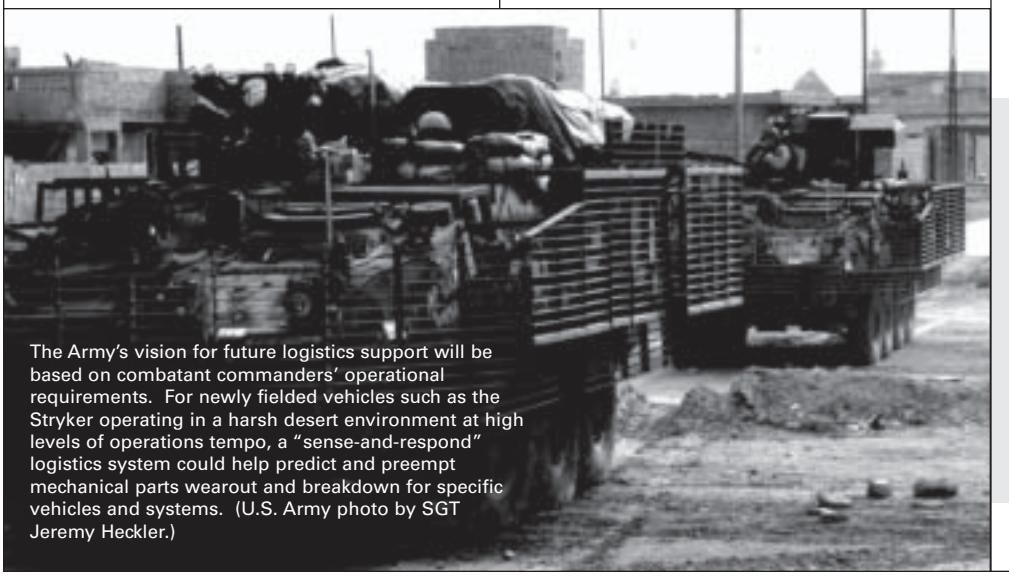
As Army logisticians adapt to change and overall transformation initiatives, supply and maintenance distribution systems will become more responsive to operational unit needs. Here, 25th Infantry Division (Tropic Lightning) Soldiers provide convoy escort support during operations south of Mosul, Iraq. (U.S. Army photo by SGT Jeremiah Johnson, 55th Signal Co. (Combat Camera).)

## Evolutionary Model

By integrating these general operational and transformational theories, we produce the Evolutionary Model. As Figure 3 depicts, the figure eight's intersection, "information" from the operational circle can potentially influence the transformation process and programmatics could drive advances to the field. Likewise, just as potential performance of a logistics system or business process may be predicted using discreet event simulation modeling, it may also be *validated* using the same process-modeling tool after implementation. In this way, process modeling serves to link the operational and transformational environments. In the example, information from operational experience regarding the merits of a more adaptive distribution-based system could directly influence the transformation process strategy or vision. Programmatics from the transformation process could provide sufficient information to influence departmental leadership to direct the development of a system that predicts requirements and preempts failure.

Because conditions that influence change do not always follow a step-by-step process, it is feasible that any phase in one portion of the model could influence any phase in the other portion. For example, if during the vision phase new technologies were uncovered that met departmental requirements, it would be feasible to proceed directly to the policy phase whereby the leadership could implement the new technology. Hence, both efforts can be constantly and consistently influenced by each other. It is this interdependence that ensures constant updates and advances occur in both spheres of influence. Using the Evolutionary Model optimizes the interdependence between operational experience and the transformation process.

The Evolutionary Model provides a phased approach within the operational experience and transformation process and a comprehensive foundation for developing a strategic plan for change management. Using the Evolutionary Model capitalizes on the interrelationship between operational experience and transformation efforts. It greatly enhances the Army's capacity to formulate sound policy, program and priority decisions. By managing change more effectively, the Army can quickly overcome the unprecedented scale and speed of logistics transformation.



The Army's vision for future logistics support will be based on combatant commanders' operational requirements. For newly fielded vehicles such as the Stryker operating in a harsh desert environment at high levels of operations tempo, a "sense-and-respond" logistics system could help predict and preempt mechanical parts wearout and breakdown for specific vehicles and systems. (U.S. Army photo by SGT Jeremy Heckler.)

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